

REMARKS:

Applicant submits a new Figure 1 to replace the sketched Figure 1 originally filed. Claims 9 - 29 stand rejected as anticipated by Eckardt (U.S. 2001/0017433). Claims 13, 17, 18 and 27 have been cancelled. Claims 14 - 16 have been amended to depend from independent claim 9. Claims 28 and 29 have been amended to depend from independent claim 23. Claim 24 has been amended to correct a typographical error. The rejection of claims 9 - 12, 14 - 16, 19 - 26, 28 and 29 is traversed. New claim 30 has been added to more distinctly claim the invention consistent with the arguments confirmed herein.

The rejection to claims 9 - 12 and 14 - 16 is respectfully traversed. Independent claim 9 specifically requires a supply passage and a separate fluid reservoir, and plastic from the mold cavity is expelled into the supply passage and plastic from the supply passage is expelled into the reservoir. As shown in Figures 1 and 2, Eckardt uses spill cavities (8) which are downstream from the mold cavity (5). Although Gotterbauer utilizes nitrogen to force plastic back into the plasticizer unit, Gotterbauer requires a "hot channel distributor" system (Col. 4, lines 11 - 16) to keep the plastic fluid. There is no suggestion in Gotterbauer for an overflow reservoir in communication with the supply passage (12); rather this would run counter to the objective of the invention to save plastic (Col. 3, lines 1 - 6) and the use of a reservoir would be extremely wasteful in light of the objective to completely blow hollow the main and side cavities (Col. 5, lines 1 - 3; See Figure 5). Thus, the rejection of claim 9, and claims 10 - 12 and 14 - 16 depending therefrom, over the cited art is traversed and allowance of these claims is respectfully requested.

The rejection of claims 19 - 26, 28 and 29 is also traversed. Eckardt teaches the injection of oil or water (Paragraph 0023, last sentence; Paragraph 0039), to cool the plastic quickly and reduce cycle time (Paragraph 0038). Eckardt does teach the use of an overflow cavity 8 with the overflow regulated by valve means 9 (Paragraph 0042). However, Eckardt specifically teaches in Paragraph 0011 that the overflow (“a portion of the still melted plastic material is displaced from the cavity into a demoldable secondary cavity”) occurs during the “process step b)” which is defined in Paragraph 0009 as “injecting a fluid into the still liquid plastic material, so that the plastic material is pressed against walls of the cavity.” Thus, the only teaching of overflow in Eckardt is during fluid injection. This is the focus of claim 2 of the Eckardt application as published. There is no teaching or disclosure to open the mold cavity to overflow after cessation of fluid injection as required by independent claims 19 and 23, from which claims 20 - 22 and claims 24 - 26, 27 and 29 depend. Thus, claims 19 - 26 and 28 and 29 are clearly not anticipated by Eckardt.

There is no teaching or suggestion in the cited art to modify Eckardt to utilize the claimed process. The overflow concept known to the art as used in Eckardt ensures complete fill-out of the mold walls with plastic by overfilling the mold cavity to the point of overflow, as described in Eckardt by introducing a combination of plastic and fluid. Although Eckardt describes the overflow being “controlled by valve means 9” (Paragraph 0011), there is no suggestion to delay overflow until cessation of fluid injection; in fact there is no disclosure of the factors relating to the regulation of overflow except that it occurs “while” the fluid injection step is performed. From the teaching of the specification, it appears that the valve means should regulate the flow of the plastic melt to cover the mold walls as “homogeneously as possible, so that change-over marks are avoided as much as possible” (Paragraph 0008, last sentence). Thus, the valve means

9 is used in Eckardt to regulate the flow during fluid injection, perhaps to open the valve more as the plastic cools to maintain a desired flow rate. More likely the appropriate “regulation” would be to keep the valve closed during the initial injection until the cavity is essentially full (the 80% full with plastic melt and then filling the cavity out with water) opening the valve as more water is injected causing the overpacking and overflow, and then closing the valve once sufficient overfilling has occurred. That one of skill in the art is left to speculate regarding the regulating of the valve illustrates that Eckardt does not suggest the claimed invention. In no case does Eckardt teach or suggest waiting until fluid injection has ceased to open the valve.

Wherefore, the rejection of claims 19 - 26 is respectfully traversed and allowance of these claims is respectfully solicited.

Claims 28 and 29 have been amended to depend from claim 23 which is believed to be allowable, and allowance of these claims is also solicited.

New claim 30 is believed to be allowable consistent with arguments made herein, and was added to more clearly define the aspect of the invention wherein the plastic is allowed to flow back through the inlet after cessation of fluid injection. Wherefore allowance of new claim 30 is also respectfully solicited.


If the Applicant may be of any further assistance or provide any other information in the prosecution of this application, the Examiner is requested to call the undersigned at (248) 364-2100.



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Respectfully submitted,

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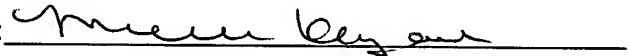
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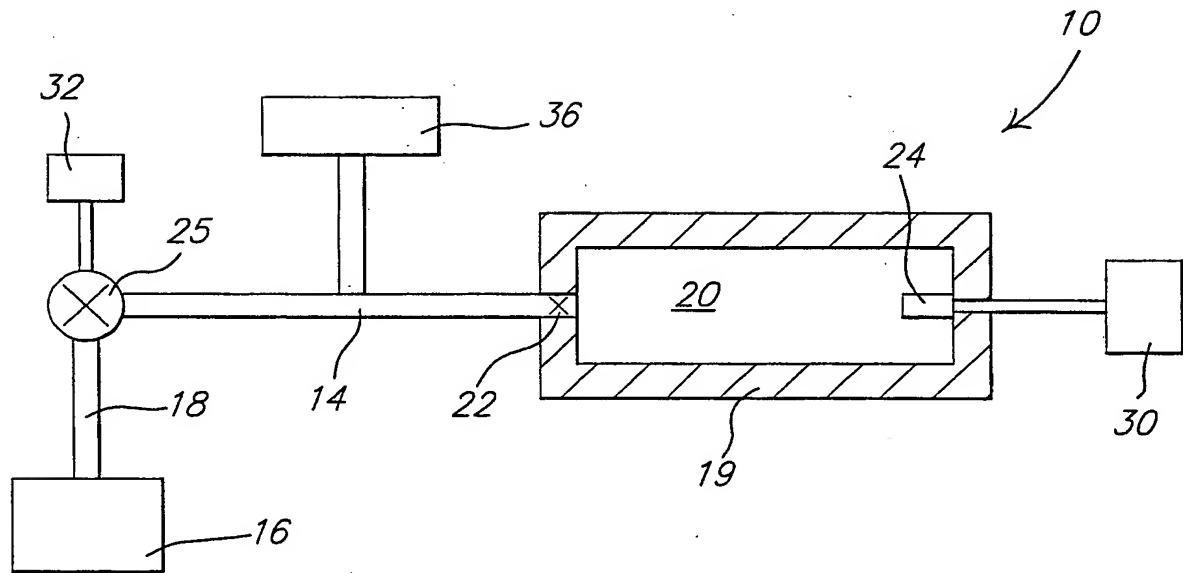


FIG. 1.